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etc., are ectodermic, but the internal generative organs are of mesodermic origin. The young forms pass into the stomach of the mussel, from which it works its way into the pericardium and kidneys of the host. The details of the adult structure are given.

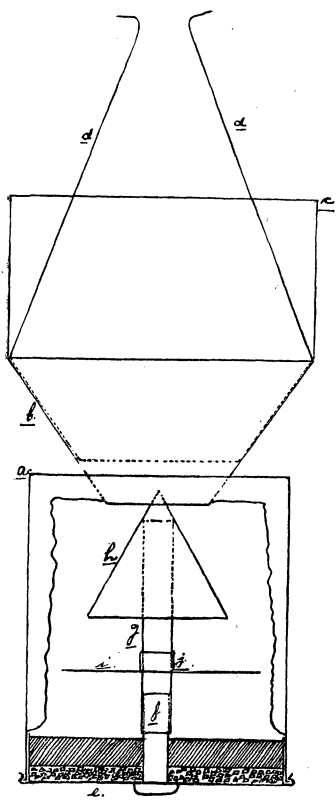
At the meeting of the Linnean Society of New South Wales, Nov. 28, 1888, Mr. J. J. Fletcher described twenty new species of Australian earthworms, twelve belonging to the genus *Cryptodrilus*.

MOLLUSCA.—The land-shell, *Subulina octona* Chem., hitherto regarded as peculiar to the West Indies, has been found in a coffee plantation in New Caledonia. Its introduction is as yet unexplained.

ENTOMOLOGY.

AN INSECT TRAP TO BE USED WITH THE ELECTRIC LIGHT.
—Some experience in collecting insects at the electric lights last summer led me to the conclusion that a simple piece of apparatus, which could take the collector's place, when he was forced to go home to steal a few hours for sleep, would be a boon to the insect-hunter. Having once gained the idea I at once endeavored to realize it, with the following result:

I obtained a three-quart tin pail, represented by *a* in the accompanying drawing, about six and one-half inches long by five and a half in diameter, and had a tinner cut out of the bottom a three-inch circle. Then taking a funnel six inches and a half in diameter at its widest part my tinsmith cut off the smaller end so as to leave an opening at this end of two and a quarter inches in diameter. This frustrum of a hollow cone, *b* in the drawing, is then soldered fast to the bottom of the pail *a*, the flaring end being outward and the smaller end projecting within the pail a half inch or more. A flat, hexagonal piece of tin, *c*, was next made to fit the funnel, *b*, and, after being carefully adjusted so as to stand vertically across the center of the mouth of the funnel, was firmly soldered in this position. Two pieces, *dd*, of steel spring, No. 8 wire, were then fastened to opposite sides of the funnel. These wires when pressed together at the top will pass into the small opening in the bottom of the globe of the U. S. Electric Light Co.'s lamp, and when released from pressure will spring back to their normal po-



sition and the projecting ends will rest upon the inner surface of the globe, and thus furnish a means of support for the apparatus. The lid of the pail, *e*, which forms the bottom of the trap, has soldered to its inner face a cylindrical tube of two inches or a little less in length; between this tube and the rim of the lid is put first a layer of crystals of potassium cyanide and over this a half-inch layer of plaster of Paris, which should be carefully smoothed down and then moistened with sufficient water to form a hardened crust over the top a quarter of an inch or a little more in thickness. The lid will have to be supported in the mouth of the pail in some way similar to that illustrated by the working drawing. Finally, a cylindrical tube, *g*, four and one-half inches long is made just large enough to fit snugly over the tube, *f*, and a hollow cone, *h*, with a diameter of three and a height of two and one-half inches is fastened to its

top. If it is thought desirable a disk, *i*, about four inches in diameter, with a collar, *j*, may be made to slide up and down the tube *g*.

The whole inside of this trap, except the lower face of the hollow cone, *h*, should be painted black to allow the prey as little light as possible to aid them in making their escape; and the cone, *c*, should be thickly pierced with small holes one inch from the top. It is also well to varnish both sides of the vertical plate, *c*, the inside of the funnel, *b*, and the upper surface of the hollow cone, *h*, to make "*Facilis desensus Avernii*." I have substituted glass for tin in the plate, *c*, as this material is probably entirely invisible to insects, they are more likely to heedlessly dash against it, while they may flutter about the bright tin. But it is much more difficult to fasten to the fun-

nel than tin, is easily broken, and I have not been able to see that it is, in practice, superior to tin. Although the action of the trap seems simple enough it may not be amiss to add a few words on this point. The insects that cluster about the electric lights will dash against the vertical plate, *z*, and being unable to obtain a foot-hold easily either upon its surface or that of the funnel, they will be likely to find their way into the inside of the trap, where they are pretty certain to remain, being prevented from escaping by the deadly fumes of the potassium cyanide and the cone, *c*, whose polished lower surface lighted up by the holes mentioned above will attract them away from the single opening.

The disk, *i*, merely serves to keep a portion of the insects separate from the others while they are engaged in their desperate death struggles; it may, however, be farther utilized as a support for a coarse wire screen, which is not represented in the drawing. This screen will serve a useful purpose in allowing beetles and other small insects to escape through it to the bottom of the trap; in this way only can moths be preserved in a fit state for museum specimens. The tube, *g*, can be raised or lowered so as to more or less completely close the opening in the bottom of the funnel and thus shut out all insects larger than a certain size. My limited experience last summer with this trap convinced me that it was of little use for collecting *Lepidoptera*, as they were usually ruined by the *Coleoptera*, which are much less easily overcome by the poison used. I have not tried the wire screen mentioned above, however, and this modification may preserve a considerable number very well. It answers the desired end very well indeed, however, for all the other orders, and it is especially useful in collecting small *Hemiptera*, *Neuroptera*, *Diptera* and *Hymenoptera*. I have frequently found a pint or more of insects in the trap when I came to examine it in the morning after exposure for a whole night.

Many of the forms will of course occur in unwelcome abundance, and the task of looking over the whole mass carefully is no slight one but it pays. I have in a single night taken a few more than a hundred species, and in three consecutive nights as many as a hundred and fifty species, but I have no doubt but that this record can be easily broken if some of my experiment-loving brother or sister entomologists will follow the suggestions offered in this paper.—*Jerome McNeill*.